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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,501	06/27/2001	Jun Akikusa	SHG-0047	8796

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EXAMINER	
ALEJANDRO, RAYMOND	
ART UNIT	**PAPER NUMBER**
1745	

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/891,501	AKIKUSA ET AL.	
	Examiner	Art Unit	
	Raymond Alejandro	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05/17/04 & 06/14/104/*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on 05/17/04 and 06/14/04 have been entered.

This office submission is in reply to the foregoing RCE. The applicants have overcome the new matter issue (as indicated in Advisory Action of 12/16/03) and the 35 USC 103 rejection. Refer to the abovementioned amendment for specific details on applicant's rebuttal arguments. However, the instant claims are rejected again over new art as seen below and for the reasons of record:

Specification

2. The amendment filed 06/14/04 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: a) (in the specification at page 5, lines 13-23) "*0 % ≤ Co ≤ 80 % with respect to*"; b) (claim 1) "*0 % ≤ Co ≤ 80 % with respect to*". It is noted that the original disclosure does not provide support to amend or rephrase both the specification and the claims to recite the foregoing limitation.

In this respect, it is noted that the new matter issue as set forth above as well as in the Advisory Action of 12/16/03 has been contended by the applicants. It is further noted that

applicants have now submitted: i) an uncertified or unofficial English language translation of the Japanese reference JP 2000-193750 (see papers of 05/17/04); and, ii) a declaration under 37 CFR 1.132 (see papers of 05/17/04) indicating that the original language of the specification was an obvious error that should have recited as presently amended.

However, it is noted that where a foreign priority document under 35 U.S.C. 119 is of record in the U.S. application file, applicant may not rely on the disclosure of that document to support correction of an error in the pending U.S. application. *Ex parte Bondiou, 132 USPQ 356 (Bd. App. 1961).* This prohibition applies regardless of the language of the foreign priority documents because a claim for priority is simply a claim for the benefit of an earlier filing date for subject matter that is common to two or more applications, and does not serve to incorporate the content of the priority document in the application in which the claim for priority is made.

Refer to MPEP 2163.06: II. Obvious Errors.

It is also pointed out that the foregoing amendment raising the issue of new matter does not constitute an obvious error as argued by the applicants because it is unclear what specific range at all was originally intended as well as whether or not it was originally intended to recite the entire range of 0-80 %, inclusive (including the extreme magnitudes), and therefore, one skilled in the art would not recognize the existence of such error in the specification nor the appropriate correction. Additionally, since the amendment to the present application is not fully supported in the original description, mere arguing that the amendment represents rephrasing or rewording of the originally disclosed range is neither appropriate.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 3-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The added material which is not supported by the original disclosure is as follows: (claim 1) "*0 % ≤ Co ≤ 80 % with respect to*". It is noted that the original disclosure does not provide support to amend or rephrase both the specification and the claims to recite the foregoing limitation.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1 and 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the German document DE 19949431 (hereinafter referred to as "*the DE'431 document*").

The instant application is directed to a solid oxide fuel cell wherein the disclosed inventive concept comprises the specific electrolyte layers.

As to claims 1, 3-5:

The DE'431 document disclose a solid oxide fuel cell having a laminate structure comprising an air electrode, a fuel electrode, a solid electrolyte layer interposed between said air electrolyte layer and said fuel electrode layer; and an intermediate layer interposed between said electrolyte layer and said air electrode layer; wherein the electrolyte layer comprises a material; specified by La1-aAaGa1-(b+c)BbCocO3, said air electrode layer comprises a material specified by La1-dAdCoO3, and said intermediate layer comprises a material specified by La1-eAeGa1-(f+g)BfCogO3, and wherein A is at least one element selected from the group consisting of Sr and Ca, B is at least one element selected from the group consisting of Mg, Al and In, and $0.05 \leq a \leq 0.3$, $0 \leq b$, $e \leq 0.3$, $0 \leq c \leq 0.15$, $b+c \leq 0.3$, $0 \leq d \leq 0.5$, $0 \leq f \leq 0.15$, $0.15 \leq g \leq 0.3$ and $f+g \leq 0.3$ and wherein a composition continuously changes in each of an interface between said intermediate layer and said electrolyte layer and an interface between said intermediate layer and said air electrode layer (CLAIMS 4-5)

4. Festoxidbrennstoffzelle nach Anspruch 1, dadurch gekennzeichnet, daß die Elektrolytschicht ein Material vorgegeben durch $La_{1-a}A_aGa_{1-(b+c)}B_bCo_cO_3$ enthält, die Luftelektrodenschicht eine Material vorgegeben durch $La_{1-d}A_dCoO_3$ enthält, worin A mindestens ein Element ausgewählt aus der Gruppe bestehend aus Sr und Ca; B ein Element ausgewählt aus der Gruppe bestehend aus Mg, Al und In, und $0,05 \leq a \leq 0,3$; $0 \leq b \leq 0,3$; $0 \leq c \leq 0,15$; $b+c \leq 0,3$; und $0 \leq d \leq 0,5$ beträgt.

5. Festoxidbrennstoffzelle nach Anspruch 2, dadurch gekennzeichnet, daß die Elektrolytschicht ein Material vorgegeben durch $La_{1-a}A_aGa_{1-(b+c)}B_bCo_cO_3$ enthält, die Luftelektrodenschicht eine Material vorgegeben durch $La_{1-d}A_dCoO_3$ enthält, und die Zwischenschicht ein Material vorgegeben durch $La_{1-e}A_eGa_{1-(f+g)}B_fCo_gO_3$ enthält, worin A mindestens ein Element ausgewählt aus der Gruppe bestehend aus Sr und Ca; B ein Element ausgewählt aus der Gruppe bestehend aus Mg, Al und In, und $0,05 \leq a \leq 0,3$; $0 \leq b$; $0 \leq c \leq 0,15$; $b+c \leq 0,3$; $0 \leq d \leq 0,5$; $0 \leq f \leq 0,15$; $0,15 \leq g \leq 0,3$ und $f+g \leq 0,3$ ist.

The DE'431 document also disclose the following composition (ABSTRACT/ COL 4, line 55 to COL 5, line 2):

Die Erfinder der vorliegenden Erfindung fanden ausgehend von Perowskit-Typ Materialien, ein Material, das ein hohes spezifisches Oxidionen Leitungsvermögen aufwies, das höher als die des YSZ war. Das Material ist Lanthangallatoxid, das durch die folgende Formel zum Ausdruck gebracht wird.

$La_{1-a}A_a\ Ga_{1-(b+c)}\ B_b\ Co_c\ O_3$

(A ist mindestens ein Element, ausgewählt aus der Gruppe bestehend aus Sr (Strontium) und Ca (Calcium), B ist mindestens ein Element, ausgewählt aus der Gruppe bestehend aus Mg (Magnesium), Al (Aluminium) und In (Indium) worin $0{,}05 \leq a \leq 0{,}3$; $0 \leq b \leq 0{,}3$; $0 \leq c \leq 0{,}15$ und $b+c \leq 0{,}3$ ist).

(57) Eine Festoxidbrennstoffzelle wird offenbart. Eine Elektrolytschicht aus einem Oxidionenleiter-Material, vorgegeben durch $La_{1-a}A_aGa_{1-(b+c)}B_bCo_cO_3$, und eine Luftelektrodenschicht aus einem Elektronenleiter-Material, vorgegeben durch $La_{1-d}A_dCoO_3$, sind beschichtet worden, vorzugsweise wurde zwischen beide eine Zwischenschicht aus einem gemischten Elektronen- und Ionenleiter-Material, vorgegeben durch $La_{1-e}A_eGa_{1-(f+g)}B_fCo_gO_3$, eingelagert. Das Schichtengefüge wird gesintert, um die Schichten zusammenzufügen und anschließend einer Wärmebehandlung unterworfen, um die Diffusion der Elemente durch die Phasengrenzfläche zwischen den angrenzenden Schichten zu erreichen. Die Zusammensetzung in jeder der Phasengrenzflächen ändert sich infolgedessen kontinuierlich. Hier ist A mindestens ein Element, ausgewählt aus der Gruppe, bestehend aus Sr und Ca; B ein Element, ausgewählt aus der Gruppe, bestehend aus Mg, Al und In, und $0{,}05 \leq a \leq 0{,}3$; $0 \leq b$; $0 \leq c \leq 0{,}15$; $b + c \leq 0{,}3$; $0 \leq d \leq 0{,}5$; $0 \leq f \leq 0{,}15$; $0{,}15 \leq g \leq 0{,}3$ und $f + g \leq 0{,}3$. Die Zelle ist infolgedessen frei von Rissen, Verformungen, Delaminierungen, einem Anstieg des Phasengrenzflächenwiderstandes unter thermischer Beanspruchung während des Sinterungsprozesses und im Betrieb. Ein Anstieg im Reaktionsbereich an der Luft-Elektrode führt zu einer verbesserten Zelleffektivität.

The DE'431 document also disclose the specific layer compositions (ABSTRACT/ COL 9, lines 30-45):

Die Materialien, die die oben genannten Anforderungen erfüllen werden durch die folgenden Formeln ausgedrückt:

Elektrolytschicht: $La_{1-a} A_a Ga_{1-(b+d)} B_b Co_c O_3$ (1)

Luftelektrodenschicht: $La_{1-a} A_d CoO_3$ (2)

Zwischenschicht: $La_{1-e} A_e Ga_{1-(f+g)} B_f Co_g O_3$ (3)

Hier ist A ein Element oder zwei Elemente ausgewählt aus der Gruppe von Strontium (Sr) und Calcium (Ca), B ist ein Element oder zwei oder mehr Elemente ausgewählt aus der Gruppe von Magnesium (Mg), Aluminium (Al) und Indium (In) und $0,05 \leq a \leq 0,3$; $0 \leq b$; $c \leq 0,3$; $0 \leq c \leq 0,15$, $b+c \leq 0,3$, $0 \leq d \leq 0,5$, $0 \leq f \leq 0,15$; $0,15 \leq g \leq 0,3$ und $f+g \leq 0,3$.

It is also disclosed that the compositions continuously change in an interface between the intermediate layer and the air electrode layer and in an interface between the intermediate layer and the electrolyte layer (COL 8, lines 38-67).

It is disclosed that the thickness of the electrolyte layer is preferably within a range of 10-200 μm (col 13, lines 5-30); and the thickness of the intermediate layer is preferably within a range from 10-100 μm; more preferably 20-90 μm; most preferably 30-80 μm (col 15, lines 20-50).

With respect to claim 6:

It is disclosed that the composition continuously changes in each of an interface between said intermediate layer and said electrolyte layer and an interface between said intermediate layer and said air electrode layer (CLAIMS 3-5).

The DE'431 document disclose a solid oxide fuel cell according to the foregoing. However, The DE'431 document do not expressly disclose the thickness of the second electrolyte layer being larger than the thickness of the first electrolyte layer.

In view of the above, it would have been obvious to one skilled in the art at the time the invention was made to make the thickness of the second electrolyte layer larger than the thickness of the first electrolyte layer in the electrolyte layers of the DE'431 document as the DE'431 document per se teaches that the thickness of the intermediate layer (*second electrolyte layer*) is preferably within a range from 10-100 μm, more preferably 20-90 μm, most preferably 30-80 μm and the thickness of the electrolyte layer (*first electrolyte layer*) is preferably within a range of 10-200 μm. Furthermore, the DE'431 document teaches that if the electron and mixed conductor is used for the intermediate layer, the area of the two-phase interface between the electron and ion mixed conductor, available for the ionization of oxygen, can be varied. *Thus, those of ordinary skill in the art would obviously recognize that by varying the specific layer interface area of both electrolyte layers, satisfactory ion conduction and conductivity is achieved. Hence, the prior art directly teaches the use of thickness of the electrolyte layers within the claimed limitation would enhance ion conduction and conductivity at all. That is, the thickness of the second electrolyte layer (having more amount of Co) being larger than the thickness of the first electrolyte layer (having a lesser amount of Co) might be obtained* in light of the disclosed layer thickness for both electrolyte layer. Accordingly, a suitable combination of specific disclosed thickness magnitude would produce the second electrolyte layer with a larger thickness than the first electrolyte layer. *Moreover, where the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed feature and a feature having the claimed relative dimensions would not perform differently than the prior art device/element/member, the claimed device/element/member is not patentably distinct from the prior art device/element/member. That is, limitations relating to the size of the*

feature/element/member are not sufficient to patentably distinguish over the prior art as it is noted that changes in size is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular size (i.e. thickness) of the claimed first and second electrolyte layers is significant. In re Rose 105 USPQ 237; In re Rinehart 189 USPQ 143; In Gardner v. TEC Systems, Inc., 220 USPQ 777 & 225 USPQ 232,

(See MPEP 2144.04 [R-1] Legal Precedent as Source of Supporting Rationale)

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1, 3-4 and 6 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 6287716. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons:

The US patent No. 6287716 claims the following (CLAIMS 1-3):

1. A solid oxide fuel cell having a laminate structure,
comprising:
an air electrode layer;
a fuel electrode layer;

a solid electrolyte layer interposed between said air electrode layer and said fuel electrode layer; and

an intermediate layer interposed between said electrolyte layer and said air electrode layer,

wherein said electrolyte layer comprises a perovskite type oxide ion conductor material, said air electrode layer comprises a perovskite type electron conductor material, and said intermediate layer comprises a perovskite type electron and ion mixed conductor material,

wherein a composition continuously changes in each of an interface between said intermediate layer and said electrolyte layer and an interface between said intermediate layer and said air electrode layer, and

wherein said electrolyte layer, said air electrode layer, and said intermediate layer comprise at least one common identical metal element.

2. The solid oxide fuel cell according to claim 1, wherein said electrolyte layer comprises a material specified by $La_{1-a}A_aGa_{1-(b+c)}B_bCo_cO_3$, and said air electrode layer comprises a material specified by $La_{1-d}A_dCoO_3$, and wherein A is at least one element selected from the group consisting of Sr and Ca and mixtures thereof, B is at least one element selected from the group consisting of Mg, Al and In and mixtures thereof, and $0.05 \leqq a \leqq 0.3$, $0 \leqq b \leqq 0.3$, $0 \leqq c \leqq 0.15$, $b+c \leqq 0.3$, and $0 \leqq d \leqq 0.5$.

3. A solid oxide fuel cell having a laminate structure, comprising:

an air electrode layer;

a fuel electrode layer;

a solid electrolyte layer interposed between said air electrode layer and said fuel electrode layer; and

an intermediate layer interposed between said electrolyte layer and said air electrode layer;

wherein said electrolyte layer comprises a material specified by $La_{1-a}A_aGa_{1-(b+c)}B_bCo_cO_3$, said air electrode layer comprises a material specified by $La_{1-d}A_dCoO_3$, and said intermediate layer comprises a material specified by $La_{1-e}A_eGa_{1-(f+g)}B_fCo_gO_3$, and wherein A is at least one element selected from the group consisting of Sr and Ca, B is at least one element selected from the group consisting of Mg, Al, and In, and $0.05 \leqq a \leqq 0.3$, $0 \leqq b,\ c \leqq 0.3$, $0 \leqq c \leqq 0.15$, $b+c \leqq 0.3$, $0 \leqq d \leqq 0.5$, $0 \leqq f \leqq 0.15$, $0.15 < g \leqq 0.3$, and $f+g \leqq 0.3$;

and wherein a composition continuously changes in each of an interface between said intermediate layer and said electrolyte layer and an interface between said intermediate layer and said air electrode layer.

The US patent No. 6287716 claims a solid oxide fuel cell according to the foregoing. However, the US patent No. 6287716 does not expressly disclose the thickness of the second electrolyte layer being larger than the thickness of the first electrolyte layer.

In view of the above, it would have been obvious to one skilled in the art at the time the invention was made to make the thickness of the second electrolyte layer larger than the thickness of the first electrolyte layer in the electrolyte layers of the US patent No. 6287716 as the US patent No. 6287716 itself teaches that the thickness of the intermediate layer (*second electrolyte layer*) is preferably within a range from 10-100 μm, more preferably 20-90 μm, most preferably 30-80 μm and the thickness of the electrolyte layer (*first electrolyte layer*) is preferably within a range of 10-200 μm. Furthermore, the DE'431 document teach that if the electron and mixed conductor is used for the intermediate layer, the area of the two-phase interface between the electron and ion mixed conductor, available for the ionization of oxygen, can be varied. *Thus, those of ordinary skill in the art would obviously recognize that by varying the specific layer interface area of both electrolyte layers, satisfactory ion conduction and conductivity is achieved. Hence, the prior art directly teaches the use of thickness of the electrolyte layers within the claimed limitation would enhance ion conduction and conductivity at all. That is, the thickness of the second electrolyte layer (having more amount of Co) being larger than the thickness of the first electrolyte layer (having a lesser amount of Co) might be obtained* in light of the disclosed layer thickness for both electrolyte layer. Accordingly, a suitable combination of specific disclosed thickness magnitude would produce the second electrolyte layer with a larger thickness than the first electrolyte layer. *Moreover, where the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed feature and a feature having the claimed relative dimensions would not perform differently than the prior art device/element/member, the claimed device/element/member is not patentably distinct from the prior art device/element/member. That is, limitations relating to the*

size of the feature/element/member are not sufficient to patentably distinguish over the prior art as it is noted that changes in size is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular size (i.e. thickness) of the claimed first and second electrolyte layers is significant. In re Rose 105 USPQ 237; In re Rinehart 189 USPQ 143; In Gardner v. TEC Systems, Inc., 220 USPQ 777 & 225 USPQ 232, ***(See MPEP 2144.04 [R-1] Legal Precedent as Source of Supporting Rationale)***

Response to Arguments

8. Applicant's arguments with respect to claims 1 and 3-6 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond Alejandro
Examiner
Art Unit 1745